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FORESTRY SITUATION IN THE LAKE STATES

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U. S. Department of Agriculture, Forest Service
Lake States Forest Experiment Station [1]

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FORESTRY SITUATION IN THE LAKE STATES [2]

E. L. Demmon, Director

The forests of the Lake States (Michigan, Minnesota, and Wisconsin), if well cared for, can substantially increase the industrial output and prosperity of the region, and in so doing can maintain at least double the number of workers they now support. This will necessitate a program of forest restitution, and the cooperative efforts of forest industries, forest landowners, and the public.

Forests play an important part in the Lake States economy; even after many years of exploitation they still cover 45 percent of the total land area. During the past century they have provided one of the region's most important industries. From these forests came the wood that built houses on its farms and in its cities, as well as the homes of many Americans outside the region. Many millions of dollars came from the sale of forest products. Today, the Lake States is a wood-importing region; about three-fifths of the lumber and one-fourth of the pulpwood we use is shipped in, representing a very sizable bill for freight charges alone. Over a period of time and with good forestry practices, this trend can be reversed; the Lake States can grow its own forest raw materials, and can have a balance for export.

A summary of basic facts about Lake States forests is given in table 1.

Original vs. Present Forests

The original Lake States forests, which covered approximately 100 million acres, are mostly gone. Of the 56 million acres of present forest land, only about 3 percent has not been cut over.

Forests in the Lake States can be divided roughly into two broad types -- the northern cut-over area, originally covered by a magnificent forest of pine, spruce, fir, hardwoods, and hemlock; and the southern farm woodland area mostly in hardwoods, such as oak, ash, elm, and maple. Over 80 percent of the region's forest land is in the northern cut-over area. After years of logging and frequent forest fires, it retains only remnants of old-growth trees and is now largely in second-growth pine, hardwoods, or in brush. A small percentage of the northern cut-over lands proved sufficiently fertile for permanent agriculture, but, by and large, northern forest soils are not strong agricultural soils, and the frequent fires to which they have been subjected have deteriorated them to the point where a long period of protection, care, and rehabilitation is needed if valuable forests are to be re-established.

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[1] Maintained at University Farm, St. Paul, Minnesota, in cooperation with the University of Minnesota.
[2] Address before a meeting of the Northern Hemlock and Hardwood Association at Wausau, Wisconsin, September 14, 1948.

Table 1
FACTS ABOUT LAKE STATES FORESTS

	MICH.	MINN.	WIS.	LAKE STATES
Forest Area by Ownership (1945)	Millions of acres			
Federal	2.4	3.1	1.8	7.3
State and county	4.7	8.4	3.8	16.9
Farmer	3.8	5.4	6.6	15.8
Other private	8.1	2.8	4.8	15.7
Total	19.0	19.7	17.0	55.7
Saw-timber Volume (1945)	Billions of board feet			
Softwoods	7.4	5.0	3.3	15.7
Hardwoods	16.7	6.6	11.7	35.0
Total	24.1	11.6	15.0	50.7
Pulpwood Volume Excluding Saw Timber (1945)	Millions of cords (with bark)			
Spruce and balsam	7.5	9.4	2.2	19.1
Pine	1.3	3.8	1.5	6.6
Hemlock	6.1	...	1.6	7.7
Aspen	16.2	16.8	9.8	42.8
Total	31.1	30.0	15.1	76.2
Annual Saw-timber Drain (1935-44)	Millions of board feet			
Softwoods	274	202	294	770
Hardwoods	527	158	363	1,048
Total	801	360	657	1,818
Estimated Allowable[1] Annual Cut of Saw Timber (1946-55)	Millions of board feet			
Softwoods	170	163	67	400
Hardwoods	400	227	273	900
Total	570	390	340	1,300
Annual Drain of Pulpwood Excluding Saw Timber (1935-44)	Thousands of cords (with bark)			
Spruce, balsam, pine, hemlock	609	479	561	1,649
Aspen	172	343	185	700
Total	781	822	746	2,349
Estimated Allowable[1] Annual Cut of Pulpwood (1946-55)	Thousands of cords (with bark)			
Spruce, balsam, pine, hemlock	395	375	175	945
Aspen	890	800	350	2,040
Total	1,285	1,175	525	2,985

[1] "Allowable Cut" means cutting that will improve future growth possibilities.

Forest Uses

If the Lake States region takes full advantage of its forestry opportunities, there will be room for future forest industry expansion and added opportunity for labor, particularly part-time work for local settlers; a growing tourist business will be stimulated, and the forests will add immeasurably to the pleasure of living in a country abounding with lakes and streams, fish, birds, and other wildlife. As a matter of fact, some Lake States land formerly in forest now has more public value for recreation and wildlife than for timber production. Some areas will be of greater usefulness for watershed protection. Practically all forest land, however, will serve a multiple purpose.

Forest Volumes

The total stand of timber in the Lake States at present is estimated at about 50 billion board feet of sawlog material and 200 million cords of material below sawlog size. This compares with an estimated original forest with about 16 times as much timber volume. The present forest is composed principally of sugar maple, aspen, hemlock, oak, yellow birch, elm, white pine, spruce, jack pine, and basswood, arranged in order of their merchantable volume. Of the timber species most commonly used for pulpwood (spruce, balsam fir, hemlock, jack pine, and aspen), there are 76 million cords. The remaining material of pulpwood size, but not yet commonly used for pulp, totals about 122 million cords -- 20 percent of it softwoods, 80 percent hardwoods.

It is estimated that about one-fifth of all timber of merchantable size in the Lake States is of such poor quality, small size, scattered occurrence, or remote location that it cannot be profitably harvested and utilized under current conditions.

Growth

Because present forest stands are mostly of second-growth timber, much of it in understocked stands, current growth is far below potential capacity. For sawlog material, total current growth is about 1.4 billion board feet, or 28 board feet per acre. Under intensive management, maximum yields might average 100 board feet per acre, but it will take many years of time and continuous protection and management, replanting of deforested areas, and conversion of aspen and scrub oak to more productive types, to reach this goal. It will also necessitate huge investments in money, much of which must devolve upon the public.

Drain

Average annual drain on saw timber during the 10-year period 1935-44 was about 1.8 billion board feet. Cutting for lumber accounted for 57 percent of this drain. Pulpwood made up 16 percent of the drain, although recently it has been somewhat higher. Fuelwood totaled 7 percent and smaller items, including veneer logs, fence posts, mine timbers, etc., 13 percent

Losses from fire, insects, disease, windstorms, etc., made up 7 percent of the average annual drain during the 10-year period. Fortunately, no extremely large fires have occurred in the Lake States in recent years. Practically all forested areas are accessible to motorized fire-fighting crews and equipment. State and federal fire-protection funds have provided efficient organizations, and the risk of huge fire losses has been effectively reduced although in dry years fire losses will increase.

Forest Industries

The most important forest industries dependent on Lake States forests for their raw materials are those manufacturing wood pulp and lumber. Other important forest products are veneer and plywood, cooperage, excelsior, wood distillation, lath and shingles; rough forest products include fuelwood, posts, poles, piling, hewed ties, mine timbers, and cabin logs.

Approximately 4,600 wood-processing plants are operating in the Lake States region. These, together with woods operations, give employment to about 100,000 persons, exclusive of an estimated 50,000 individual farmer-loggers.

Lumber

The lumber industry grew rapidly after 1870, and from 1875 to 1900 the Lake States region led the Nation in lumber production. During this period it turned out from one-fourth to one-third of the Nation's lumber. The decline set in about 1900, and today regional production has leveled off at a little over one billion board feet per year, or about 3 to 4 percent of national production.

The Lake States lumber industry grew up on a cut-out and get-out basis. Operations were planned with the objective of liquidating the virgin timber and selling the cut-over lands for farming. No thought was given to production of timber crops for the future or for operating on a continuous basis. As a result, large numbers of sawmills passed out of existence when the end of their timber resource was reached.

In 1945, there were 4,182 sawmills in the region, of which 3,163 were active, the others being idle for one reason or another. Most of the sawmills are small, only 24 producing in excess of 5 million board feet per year. Of these 24, only 8 have access to sufficient stumpage to continue large-scale operations for more than 15 years. We can expect the mill of the future to be small or medium-sized.

Pulp and Paper

The decline in lumbering operations during the last 50 years has been offset to a considerable extent by the growth of the pulp and paper industry. At present the Lake States region produces about one-sixth of the paper output of the Nation, representing a great diversification of types of paper and paperboard, much of it of high quality. There are 117 paper and paperboard mills in the region, and 53 wood pulp mills. In 1946 their products had a value in excess of $800,000,000.

Landownership

About 43 percent of the commercial forest land in the Lake States region is in public ownership -- 13 percent is held by the Federal Government and 30 percent by the states, counties, and municipalities. The remainder, 57 percent, is held by private owners, the great majority of them being farmers. Only about one-fourth of the commercial timberland is controlled by large operators.

Some of the larger lumber companies are liquidating their holdings; a few with vision are managing their forests for the future. Farmers and other small owners have often lacked facilities and inducements to put their woodlands

under good management, and much more education is needed to show these many small owners how to make the most of their woodlands.

In recent years pulp-mill owners have acquired an appreciable amount of forest land. Several have expressed as a goal the acquisition of sufficient land to produce at least 50 percent of their pulpwood requirements. If this trend continues, the pulpwood industry in the Lake States may well take the lead in good forestry practice amongst pulp-producing regions.

Present Cutting Practices

Destructive cutting is still a problem in the Lake States. Much clear-cutting is still in evidence, and premature cutting of second-growth stands just as they are approaching optimum growth is at the sacrifice of future yields. If forests were thinned and improved by partial cuttings, growth could be readily doubled and the future of forest industries would be brighter. What is needed most is a greatly expanded forestry educational program coupled with public regulation of cutting practices by the states.

Reforestation

Forest planting has been under way in the Lake States for many years, but only a relatively small area was planted before the Civilian Conservation Corps program was initiated in 1933. To date, about 1-1/3 million acres have been planted, whereas foresters estimate that 13 million acres additional need planting. Past plantings have demonstrated the feasibility of restocking barren and waste lands to trees, but planting must be greatly speeded up if this huge waste area is to become a forest asset to the next generation.

Forest Research

A sound program of forest research is essential if we are to have a scientific basis for growing continuous crops of timber. The Lake States Forest Experiment Station has been responsible for the federal program of forest research in this region since July 1923. It cooperates with other federal agencies, the states, universities, and industry in working on an integrated program of research, and its findings are made available currently to cooperators and others. The Station's field research program is concentrated at forest research centers, such as at Rhinelander, Wisconsin, whereas forest-resource investigations (forest survey and forest economic studies) are conducted over the region as a whole.

For example, the forest survey is currently under way in Minnesota and Michigan, in cooperation with local groups, and reports on the forestry situation and future forestry programs are being developed on a county-by-county basis.

Many regional forest problems are still untouched because of lack of funds and manpower. No research center has as yet been provided for southern Wisconsin and southern Minnesota, and the current forest survey has not yet been started in Wisconsin. Also, this region lacks a forest utilization service, such as has been provided in all other important forest regions of the country. Such a service would help solve forest-utilization problems on the ground as well as bring to the Forest Products Laboratory at Madison, Wisconsin, problems needing solution there.

Conclusion

Forest industries in the Lake States are strategically located with regard to local and national markets for forest products. If sound measures are taken towards providing future wood needs from local sources and on a sustained-yield basis, present wood-using industries can be maintained, and expanded as forest growth increases. A few industry shifts may be necessary and use of some tree species that are now considered of inferior value, such as aspen and scrub oak, will be helpful until present forests can be built up to potential growth capacity. Also, all forestry operations should be integrated, to cut down waste and to obtain fuller utilization of all material harvested. We can anticipate that imports of wood from other regions will continue until local forest productivity increases. Industry should promote good forestry practices on all forest lands, regardless of ownership. All of us should cooperate to assure that the forest resource is utilized conservatively and to the greatest good.